

**ABSTRACT**

A system, device and method for detection of several individual analytes in a test solution aliquot (83) with an array of individually operated piezoelectric crystal microbalances are described. The system comprises a connecting station (100) that receives a plurality of individually specific piezoelectric crystal microbalance flow-trough cells (10), each containing a piezoelectric crystal (50) carrying electrodes (56,62) and a coating (66,46) exposing a first member of an interaction pair specific for an individual analyte being a second member of the interaction pair. Flowing means (70) flows a solution (75) and the test solution aliquot (83) to and through a cell compartment of each of the cells (10) via the connecting station (100). Power and measurement means (130) oscillate the piezoelectric crystal(s) (50). A change in oscillating characteristics of the crystal(s) (50), following interaction between the first and second members of the interaction pair, detects presence of the individual analyte(s). Further, disposable flow cells (10) for use in an array of individually operated piezoelectric crystal microbalances (112) is described.